

CLAIMS:

1. A piezoelectric drive device with a bimodal piezoelectric resonator (1), with at least a first control electrode (2) for triggering the resonator (1) in a first drive direction,
with at least a second control electrode (3) for triggering the resonator in a second drive
5 direction, and
with a trigger circuit (6) for supplying control signals (s) to the first and the second control electrode,
characterized in that
- a regulating circuit (7) is provided for regulating the control signals (s),
 - 10 - the second control electrode (3) is designed for supplying a feedback signal (k) to the regulating circuit (7) when the resonator (1) is being triggered in the first drive direction by means of the first control electrode (2), and
 - the first control electrode (2) is designed for supplying a feedback signal (k) to the regulating circuit (7) when the resonator (1) is being triggered in the second drive
15 direction by means of the second control electrode (3).
2. A piezoelectric drive device as claimed in claim 1,
characterized in that
- the piezoelectric resonator (1) comprises a first pair of control electrodes (2,3) for triggering the resonator in the first drive direction, and a second pair of control electrodes (4,5) for triggering the resonator in the second drive direction,
 - the second pair of control electrodes (4,5) is designed for supplying a feedback
20 signal (k) to the regulating circuit (7) when the resonator (1) is being triggered in the first drive direction by the first pair of control electrodes (2,3), and
 - 25 - the first pair of control electrodes (2,3) is designed for supplying a feedback signal (k) to the regulating circuit (7) when the resonator (1) is being triggered in the second drive direction by the second pair of control electrodes (4,5).

3. A piezoelectric drive device as claimed in claim 1, characterized in that the piezoelectric resonator (1) is substantially rectangular in shape, and in that one control electrode is provided in each quadrant of the substantially rectangular piezoelectric resonator (1).

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4. A piezoelectric drive device as claimed in claim 1, characterized in that the regulating circuit (7) is designed for evaluating the amplitude of the feedback signal (k).

5. A piezoelectric drive device as claimed in claim 1, characterized in that the regulating circuit (7) is designed for evaluating the phase difference between the control signal (s) and the feedback signal (k) by means of a phase control (PLL) circuit.

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6. A piezoelectric drive device as claimed in claim 1, characterized in that the regulating circuit (7) is designed for regulating the frequency of the control signal (s).

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7. A piezoelectric drive device as claimed in claim 1, characterized in that the regulating circuit (7) is designed for regulating the amplitude of the control signal (s).

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8. A piezoelectric drive device as claimed in claim 1, characterized in that the regulating circuit (7) is designed for regulating the frequency of the control signal (s) in a first step, and for regulating the amplitude of the control signal (s) in a second step.

9. An electric shaver with a rotating and/or oscillating shaving head, characterized in that the shaver comprises a piezoelectric drive device as claimed in claim 1 for driving the shaving head.

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10. An electronic device for reading data stored on disc-type data carriers, in particular CDs and DVDs, and/or for writing data on disc-type data carriers by means of a write/read unit, characterized in that the electronic device comprises a piezoelectric drive device as claimed in claim 1 for driving the write/read unit.

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